

Serial Number: 10/612,866

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Docket No.: 02-2453

REMARKS

A telephone conference between Examiner Len Tran and Applicants' representative Harry Andrew Hild was held on April 5, 2006, in which it was agreed that the objection to Claim 22 was improper. It was further agreed that Claim 22 and all claims depending therefrom are allowable as originally presented. It was further agreed that an amendment to Claim 1 to incorporate the subject matter of Claim 2 would result in an allowance of amended Claim 1 and all claims depending therefrom.

A telephone conference between Examiner Len Tran and Applicants' representative Harry Andrew Hild was held on April 5, 2006, in which it was agreed that newly added Claim 29 is supported by applicants' disclosure. It was further agreed that new Claim 29 is allowable.

Favorable reconsideration and allowance of the claims of the present application are respectfully requested.

Claims 1, 5 and 6 stand rejected under 35 U.S.C. §102(b), as allegedly anticipated by JP 402037954 ("JP '954"). Claims 7-8 and 12-16 stand rejected, under 35 U.S.C. §103(a), as allegedly obvious over JP '954. Claims 9-11 and 19-21 stand rejected under 35 U.S.C. §103(a), as allegedly unpatentable over JP '954 in view of JP 2-274846 ("JP '846"). Claims 2-4, 17-18, and 22-24 stand objected to as allegedly being dependent upon a rejected base claim.

Referring to Page 4 of the present Office Action, the Examiner admits that dependent Claims 2-4, 17-18, and 22-24 have been deemed allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Claim 2 further defines the humidified atmosphere that contacts the molten aluminum alloy as having a higher moisture content than the surrounding ambient atmosphere. In light of the Examiner's comments

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and for the purposes of advancing prosecution applicants have amended Claim 1 to include the limitations of Claim 2.

Amended Claim 1 now recites a method of improving surface properties of cast aluminum alloys comprising: providing a molten aluminum alloy; contacting a surface of the molten aluminum alloy with a humidified atmosphere having a higher moisture content than a surrounding ambient atmosphere; and solidifying the molten aluminum alloy. In light of the amendment to Claim 1 to include the subject matter of Claim 2, Claim 2 has been cancelled. Applicants have also amended Claim 3 to be consistent with the amendment to Claim 1.

Applicants have also added new Claim 29. New Claim 29 recites a method of improving surface properties of cast aluminum alloys comprising providing a molten aluminum alloy; contacting a surface of the molten aluminum alloy with a humidified atmosphere having a higher moisture content than a surrounding ambient atmosphere; and solidifying the molten aluminum alloy, wherein the humidified atmosphere contacts the surface of the molten aluminum alloy from at least a time the molten aluminum alloy is introduced to a casting apparatus to at least a time when the molten aluminum alloy forms a shell having a thickness sufficient to prevent breakthrough egress of the molten aluminum alloy. Support for the amendment to Claim 29 is found in paragraph 45 of Applicants' disclosure. Claim 29 also includes the subject matter of original Claim 2.

Turning to the rejections of Claims 1, 5-21 under 35 U.S.C. §102(b) or §103(a), none of the prior art teaches or suggests a casting method including the step of contacting a surface of the molten aluminum alloy with a humidified atmosphere having a higher moisture content than the surrounding ambient atmosphere, as recited in amended Claim 1. Claim 1 has been amended to include the subject matter of dependent Claim 2, which the Examiner has deemed as allowable

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subject. "It is axiomatic that anticipation under §102 requires the prior art reference to disclose every element to which it is applied." *In re King*, 801 F.2d 1324, 1326, 231 USPQ 36, 138 (Fed Cir, 1986). "To establish a prima facie case of obviousness of a claimed invention all the claimed limitations must be taught or suggested by the prior art". *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 44, 496 (CCPA 1970). Therefore, the since the applied prior art references fail to disclose each and every limitation of Applicants' claimed method, Applicants submit that the rejections have been obviated and respectfully request withdrawal thereof.

New Claim 29 also recites a casting method including the step of contacting a surface of the molten aluminum alloy with a humidified atmosphere having a higher moisture content than the surrounding ambient atmosphere. Therefore, the applied prior art fails to meet each and every limitation of new Claim 29. Hence, new Claim 29 is allowable subject matter.

Applicants further note that the Examiner has indicated that Claim 22 is allowable subject matter, but has objected to Claim 22 as being dependent on a rejected base claim. Applicants note that Claim 22 is an independent claim having no dependency. Applicants' further note that the applied prior art fails to teach or suggest a method for limiting the growth of surface oxide on aluminum-magnesium alloys comprising providing a molten aluminum alloy having at least 0.1 wt. % magnesium; contacting a surface of the molten aluminum with a humidified atmosphere having a moisture content above about 0.005 kg/m³; and solidifying the molten aluminum alloy. Therefore, Applicants respectfully request that the objection to Claim 22 be withdrawn.

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Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

It is respectfully submitted that the present application is in condition for allowance. If the Examiner would like to suggest changes of a formal nature to place this application in better condition for allowance, a telephone call to Applicants' undersigned attorney would be appreciated.

Respectfully submitted,



Harry A. Hild, Esq.
Attorney for Applicants
Reg. No. 51,803
Alcoa Technical Center
Intellectual Property Department
100 Technical Drive
Alcoa Center, PA 15069
Tele. No. 724-337-4726
Fax No. 724-337-5959